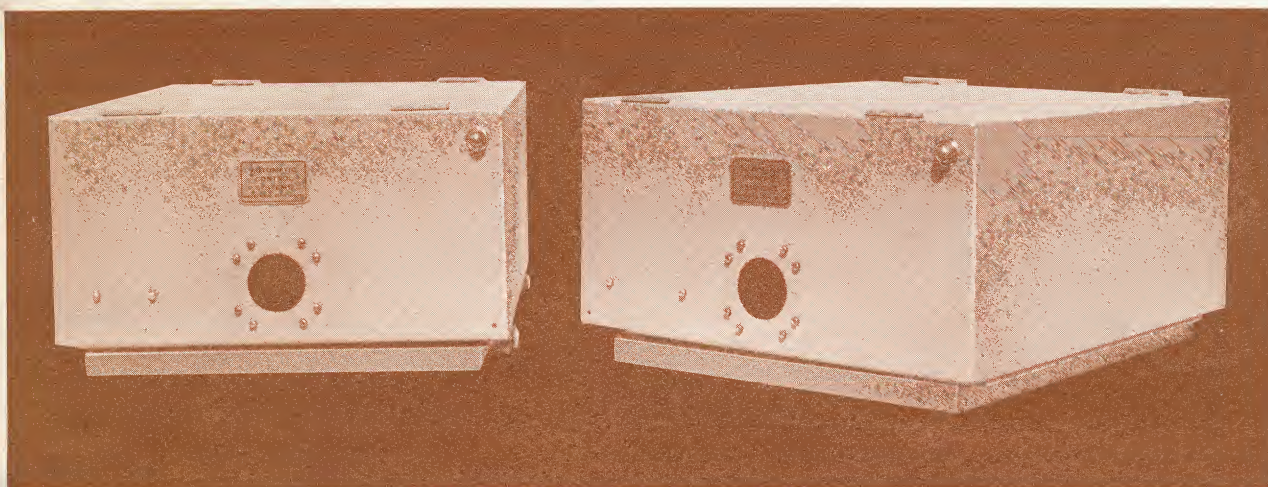


LASER DATA TRANSMISSION SYSTEM

MODEL 1010



WHAT IS IT?

A wireless method of transmitting digital information from a few feet to several miles. It will easily penetrate smoke, fog, etc.

WHY HAVE IT?

This system is designed specifically to operate in environments which exhibit a high level of RF, random noise, shock, and vibration commonly found in the steel industry, for example. In most industrial applications where there is a requirement for a data, video, or voice transmission link, the cost of installing the associated conduit usually exceeds the hardware cost for the system and is still prone to interference. This is minimized by the nature of the system. Furthermore, due to its transmission medium, the laser is totally secure.

ARE THERE ANY LICENSING REQUIREMENTS?

This system requires no FCC licensing and is fully HEW approved.

APPLICATIONS

- Teeming crane to computer
- Transfer car to computer
- Inter-plant communications
- Computer link
- General data communications

TECHNICAL DESCRIPTION

The laser transmitter is a pulse-type unit derived from the excitation of a gallium arsinide junction. The wave length of the emitted pulse is approximately 9000 angstroms. This output pulse is fed through an optical system which diverges the beam. The receiver includes a band pass optical filter followed by an avalanche detector. The detector output is amplified, buffered, and fed to the output. The receiver also includes a lens system which converges the transmitted beam. These optical systems compensate for any slight skewing motion of either transmitter or receiver or both. In order to correct for the random digital noise associated with an avalanche detector, the output of the laser receiver is applied to a small digital processor.

This unit constantly scans the incoming pulses looking for a valid start code which was part of the original transmission sequence. When this code is detected, further incoming pulses, both noise and data, are then accepted. During this "receiving" period, a special digital detector separates the data from the noise. The resultant data is stored in dedicated output registers for interrogation by computer.

Both transmitter and receiver are mounted in heavy-duty, fully gasketed NEMA enclosures.

SPECIFICATIONS

Optical power:	12 watts peak
Baud rate:	to 3000 bits/sec. pending system I/O and environmental conditions
Transmission distance:	up to 10 miles depending on environmental conditions
Power requirements:	115 VAC 60 Hz, 15 watts for transmitter, 5 watts for receiver

AUTOMATIC CONTROL SYSTEMS

"the total-concept company"

8515 Freeway Drive • Macedonia, Ohio 44056
Phone (216) 467-2186

Automatic Control Systems, Inc.
Precision Electronic Scales and Controls

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Macedonia, Ohio 44056

216/467-2186

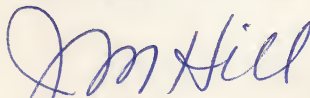
LASER TRANSMISSION SYSTEM

Enclosed please find our bulletin announcing our latest contribution toward providing closed loop control of teeming operations. The installation shown is one in daily operation at the Lorain Works of U.S. Steel, getting print-out data from a crane used in teeming molten steel from a ladle into ingots, and represents a three year development from concept to reliable reality.

The unit is strictly a transmission device with its terminals on either end specially designed to connect with existing equipment. The objective is to serve as a wireless link spanning impassable or otherwise difficult chasms. Its price tag is between \$7,000-\$9,000 depending upon the interfacing designs.

Detail your problem to us and we'll be glad to send our recommendations.

AUTOMATIC CONTROL SYSTEM, INC.


J.M. Hill
Sales Manager

JMH:feh
Enc.

ELECTRONIC WEIGHING SYSTEMS

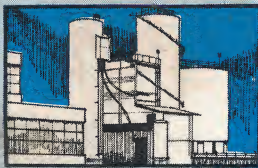


CONCEPTION



ENGINEERING

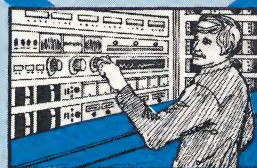
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INSTALLATION

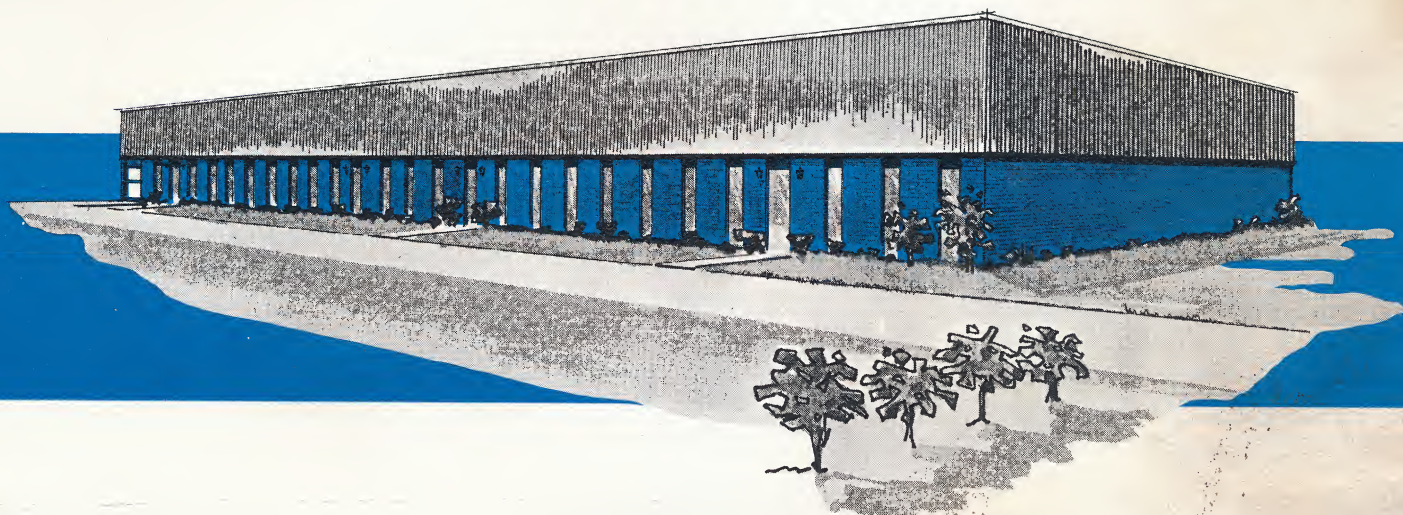


MANUFACTURING



TESTING

AUTOMATIC
CONTROL
SYSTEMS



ABOUT "THE TOTAL-CONCEPT COMPANY" . . .

The ingredients that were blended together to form Automatic Control Systems are a unique combination of highly-developed engineering capabilities . . . a steadfast dedication to uncompromising quality and reliability . . . and an innovative, energetic enthusiasm for solving even the most difficult and challenging problems.

From these ingredients has emerged a company that truly can be regarded as "the total-concept company" of electronic weighing . . . a company that assigns a man to personally oversee each project from its very conception, through engineering, manufacturing, and testing, right to its eventual installation at the customer's premises.

This close, personal service is a rare commodity in today's impersonal business world.

Although smaller in size and relatively young, Automatic Control Systems is a giant when you consider its engineering capabilities. Its key engineering personnel have nearly 50 years of experience in electronic weighing and related equipment.

The basic product line itself, which is more than 25 years old, is constantly being improved and supplemented with new, inventive products utilizing the latest electronic weighing, diagnostic, and communications components available.

In the highly-competitive area of new-product development, Automatic Control Systems has exceptional engineering expertise for developing special new products and systems to customer requirements. Development time, together with overall costs, are in most cases substantially reduced by utilizing the company's unique "mix-and-match" line of standard products in engineering new systems. However, a customer's needs are never compromised by substituting a system that does not meet his specific requirements.

A company must have knowledgeable management to fully utilize its engineering capabilities. The owners of Automatic Control Systems are not only knowledgeable and capable, but they are actively engaged in the company's management on a full-time, day-to-day basis.

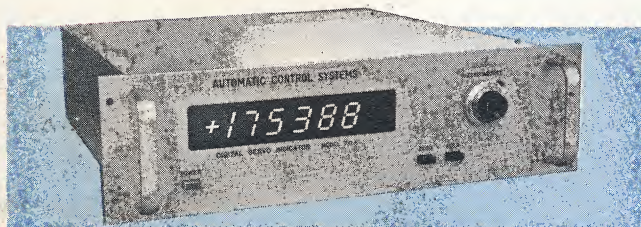
This aggressive, forward-looking management team has led the company to a steady, healthy growth record. It enjoys financial stability in a field prone to instability.

Again, a good measure of its success is due to a unique combination of ingredients — energetic, youthful exuberance tempered by the know-how and wisdom of experience — that make up the management team at Automatic Control Systems.

QUALITY-CRAFTED PRODUCTS

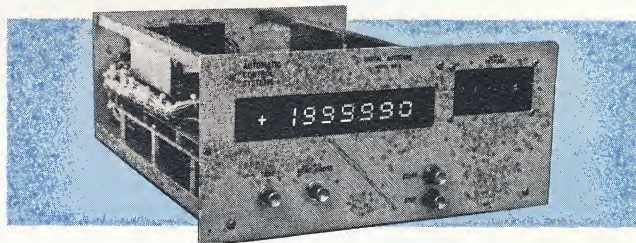
The Automatic Control Systems line of electronic weighing, diagnostic, and communications products is among the finest available anywhere. All products are designed, engineered, and manufactured to provide the highest degree of accuracy possible — yet rugged enough to withstand industrial environments.

710A DIGITAL INDICATOR



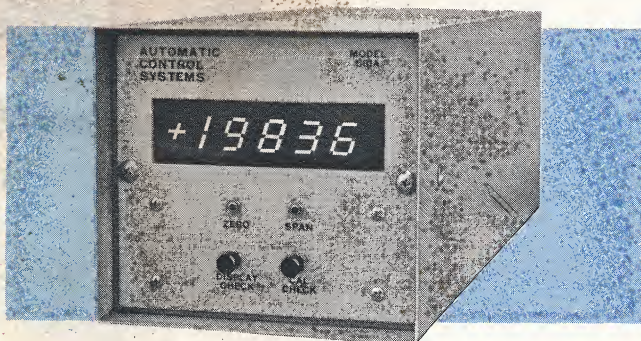
The patented Model 710A is the highest-quality digital transducer servo indicator available. It provides a unique combination of digital display, stability, high resolution, and high accuracy measurement of low-level dc signals. For example, 0-2,000,000 pounds by 10-pound increments.

810A DIGITAL AUTOTARE



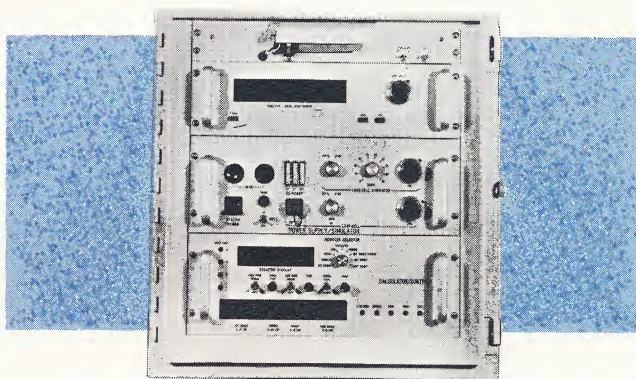
The finest instrument of its type, the Model 810A Autotare contains a high speed, 100% digital circuit used to compute net weight. Optional batch controller (shown) accurately controls batching with preact and dribble set points.

681A DIGITAL INDICATOR



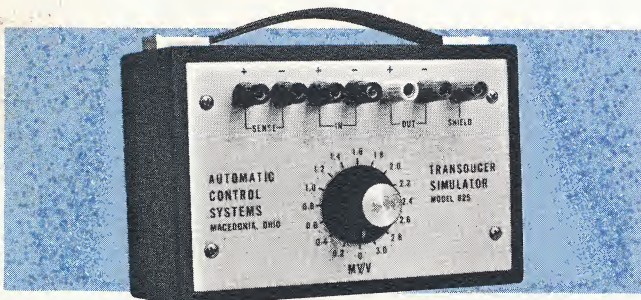
The Model 681A digital indicator is a dual slope, fully solid state transducer indicator designed for heavy-duty service. It can be used with all types of strain gage transducers and provides direct readout of engineering units. 0-200,000 pounds by 10-pound increments.

TEEMWEIGH SYSTEM



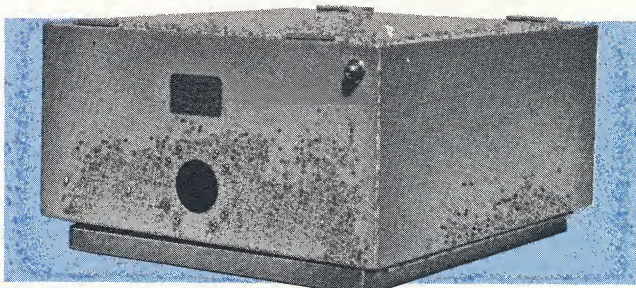
Precision pouring by weight eliminates losses to scrap and over-provision caused by obsolete pouring methods. In addition to improving yield, the Model 601 Teemweigh provides many other benefits in steelmaking operations.

TRANSDUCER SIMULATOR



The Model 825 is a convenient, accurate, yet economical diagnostic tool for servicing systems using strain gage load cells or pressure transducers. It determines whether a problem is in the instrument, transducer, or associated cabling.

LASER TRANSMITTER



The Model 1010 is a wireless method of transmitting digital information from a few feet to several miles. It is unaffected by RF, electrical, or mechanical "noise". No FCC license is required and the system is fully HEW approved.

OUR VALUED CUSTOMERS . . .

Among our good customers are all major crane manufacturers in the United States. Here are the names of some of our other customers, plus typical comments from just a few.

"Test results show better actual slab weights with Teemweigh-processed material and a significant yield improvement."
U. S. Steel

"... good luck with your Teemweigh systems, they are first rate."

Bethlehem Steel

"Thank you for the quick service on our order. The equipment is in and performing beautifully."

Patco Products
(food products)

Allegheny Ludlum

Armco Steel

BASF Wyandotte Corp.

Bethlehem Steel

Borg-Warner

COSIPA

Cutler-Hammer

Exxon

H. K. Ferguson

General Motors, Pontiac
Motor Car Div.

B. F. Goodrich

Interlake Steel

ITT Grinell

Keystone Steel

Arthur G. McKee

NASA

Phillips Petroleum

Standard Oil of Ohio

Steel Co. of Canada

Union Carbide Corp.

U. S. Air Force

U. S. Steel

United Aircraft Corp.

Hiram Walker & Sons, Ltd.

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